

WHAT IS CLAIMED IS:

1. A pressure vessel unit comprising:

a pressure vessel capable of being opened to receive a user and closed to create a hermetic seal;

5 said pressure vessel comprising an on-board interface capable of enabling a user to control one or more functions of said pressure vessel unit, a pressure transducer capable of monitoring air pressure inside said pressure vessel, and a user sensor capable of measuring one or more parameters of a user's body condition;

a blower capable of removing air from said pressure vessel; and

10 a proportioning valve capable of controlling the amount of air allowed to enter into said pressure vessel.

2. The pressure vessel unit of Claim 1, wherein said on-board interface is placed in electrical communication with said blower, said proportioning valve and said pressure  
15 transducer, said on-board interface being capable of enabling a user to initiate a session of cyclic variations in altitude conditioning by cyclically operating said blower to create a negative pressure in said pressure vessel and by cyclically operating said proportioning valve to introduce air into said pressure vessel to reduce the negative pressure up to the point of atmospheric pressure.

20 3. The pressure vessel unit of Claim 2, wherein said user sensor is placed in electrical communication with said on-board interface, said on-board interface being capable of monitoring readings from said user sensor to determine whether a measured parameter of a user's body condition is at a level sufficient enough to warrant a modification of a predetermined program  
25 regulating cyclic variations in altitude conditioning.

4. The pressure vessel unit of Claim 3, wherein said on-board interface is capable of modifying a predetermined program regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level  
30 sufficiently outside a predetermined range for the selected predetermined program.

5        5.        The pressure vessel unit of Claim 3, wherein said on-board interface is capable of selecting an alternate predetermined program for regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the originally selected predetermined program.

10        6.        The pressure vessel unit of Claim 1, wherein an external controller is placed in electrical communication with said blower, said proportioning valve and said pressure transducer, said external controller being capable of enabling a user to initiate a session of cyclic variations in altitude conditioning by cyclically operating said blower to create a negative pressure in said pressure vessel and by cyclically operating said proportioning valve to introduce air into said pressure vessel to reduce the negative pressure up to the point of atmospheric pressure.

15        7.        The pressure vessel unit of Claim 6, wherein said user sensor is placed in electrical communication with said external controller, said external controller being capable of monitoring readings from said user sensor to determine whether a measured parameter of a user's body condition is at a level sufficient enough to warrant a modification of a predetermined program regulating cyclic variations in altitude conditioning.

20        8.        The pressure vessel unit of Claim 7, wherein said external controller is capable of modifying a predetermined program regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the selected predetermined program.

25        9.        The pressure vessel unit of Claim 7, wherein said external controller is capable of selecting an alternate predetermined program for regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the originally selected predetermined program.

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10. A system for cyclic variations in altitude conditioning comprising:

a pressure vessel unit,  
a kiosk controller, and  
a master controller,

5           said pressure vessel unit comprising  
            a pressure vessel capable of being opened to receive a user and closed to  
            create a hermetic seal;  
                    said pressure vessel comprising an on-board interface capable of  
                    enabling a user to control one or more functions of said pressure  
10           vessel unit, a pressure transducer capable of monitoring air  
            pressure inside said pressure vessel, and a user sensor capable of  
            measuring one or more parameters of a user's body condition;  
            a blower capable of removing air from said pressure vessel; and  
            a proportioning valve capable of controlling the amount of air allowed to  
15           enter into said pressure vessel;  
            said kiosk controller comprising  
            a first software program, and  
            an information processing system capable of executing said first software  
            program,  
20           said kiosk controller capable of being in electrical communication  
            with master controller and said on-board interface,  
            said master controller comprising  
            a second software program, and  
            an information processing system capable of executing said second  
25           software program, and  
            said master controller capable of being in electrical communication  
            with said on-board controller.

11. The system of Claim 10, wherein said on-board interface is placed in electrical  
30 communication with said blower, said proportioning valve and said pressure transducer, said on-

board interface being capable of enabling a user to initiate a session of cyclic variations in altitude conditioning by cyclically operating said blower to create a negative pressure in said pressure vessel and by cyclically operating said proportioning valve to introduce air into said pressure vessel to reduce the negative pressure up to the point of atmospheric pressure.

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12. The system of Claim 11, wherein said user sensor is placed in electrical communication with said on-board interface, said on-board interface being capable of monitoring readings from said user sensor to determine whether a measured parameter of a user's body condition is at a level sufficient enough to warrant a modification of a predetermined program regulating cyclic variations in altitude conditioning.

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13. The system of Claim 12, wherein said on-board interface is capable of modifying a predetermined program regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the selected predetermined program.

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14. The system of Claim 12, wherein said on-board interface is capable of selecting an alternate predetermined program for regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the originally selected predetermined program.

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15. The system of Claim 10, wherein said kiosk controller is placed in electrical communication with said blower, said proportioning valve and said pressure transducer, said kiosk controller being capable of enabling a user to initiate a session of cyclic variations in altitude conditioning by cyclically operating said blower to create a negative pressure in said pressure vessel and by cyclically operating said proportioning valve to introduce air into said pressure vessel to reduce the negative pressure up to the point of atmospheric pressure.

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16. The system of Claim 15, wherein said user sensor is placed in electrical communication with said kiosk controller, said kiosk controller being capable of monitoring readings from said

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user sensor to determine whether a measured parameter of a user's body condition is at a level sufficient enough to warrant a modification of a predetermined program regulating cyclic variations in altitude conditioning.

5     17.     The system of Claim 16, wherein said kiosk controller is capable of modifying a predetermined program regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the selected predetermined program.

10    18.     The system of Claim 16, wherein said kiosk controller is capable of selecting an alternate predetermined program for regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the originally selected predetermined program.

15    19.     The system of Claim 10, wherein said information processing system executing said first software program is capable of receiving readings from said user sensor to determine whether a measured parameter of a user's body condition is sufficient enough to warrant a modification of a predetermined program regulating cyclic variations in altitude conditioning, and making such modification if such measured parameter is deemed sufficient.

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20.     The system of Claim 10, wherein said information processing system executing said first software program is capable of receiving readings from said user sensor to determine whether a measured parameter of a user's body condition is at a level sufficient enough to warrant a selection of an alternate predetermined program regulating cyclic variations in altitude  
25 conditioning, and making such alternate selection if such measured parameter is deemed sufficient.

21.     The system of Claim 10, wherein said master controller is located in a separate facility from said kiosk controller and said pressure vessel unit.

22. The system of Claim 10, wherein said master controller is capable of storing user data entered into and stored on said kiosk controller or said on-board interface.

23. The system of Claim 22, wherein said master controller is capable of making such data stored on said master controller available to a second kiosk controller in electrical communication with said master controller, such that a user can make use of a second pressure vessel unit in electrical communication with said second kiosk controller without the need to re-enter data already stored in said master controller.

24. A method of controlling a user's use of a system for cyclic variations in altitude conditioning, said method comprising the steps of:

making a system for cyclic variations in altitude conditioning available to a user, wherein said system comprises

a pressure vessel unit,

a kiosk controller, and

a master controller,

said pressure vessel unit comprising

a pressure vessel capable of being opened to receive a user and closed to create a hermetic seal;

said pressure vessel comprising an on-board interface capable of enabling a user to control one or more functions of said pressure vessel unit, a pressure transducer capable of monitoring air pressure inside said pressure vessel, and a user sensor capable of measuring one or more parameters of a user's body condition;

a blower capable of removing air from said pressure vessel; and  
a proportioning valve capable of controlling the amount of air allowed to enter into said pressure vessel;

said kiosk controller comprising

a first software program, and

an information processing system capable of executing said first software program,

said kiosk controller capable of being in electrical communication with master controller and said on-board interface, said master controller comprising a second software program, and an information processing system capable of executing said second software program, and

said master controller capable of being in electrical communication with said on-board controller; and allowing said user to pay for a session of cyclic variations in altitude conditioning in said system via the entry of payment information relating to the user into said kiosk controller.

25. The method of Claim 24, further comprising the step of:  
downloading data from said kiosk controller to said master controller, wherein said data relates to a user and was previously entered and stored on said kiosk controller.

26. The method of Claim 25, wherein said master controller is located in a different facility from said kiosk controller.

27. The method of Claim 24, further comprising the step of:  
allowing a user to utilize a second system comprising a second kiosk controller without requiring the re-entry of data into said second kiosk controller by uploading data previously entered by a user from said master controller to said second kiosk controller.

28. The method of Claim 24, further comprising the step of:  
allowing a user to utilize a second system comprising a second kiosk controller without requiring the re-entry of data into said second kiosk controller by making such data previously entered by a user available for access from said master controller by said second kiosk controller.

29. The method of Claim 24, further comprising the step of:  
requiring a user to successfully complete a set up program in order to ensure that the user is capable of safely completing a regular session of cyclic variations in altitude conditioning.
- 5 30. The method of Claim 24, further comprising the step of:  
accessing data related to a user from said kiosk controller or said master controller in order to determine a suitable program for the user based upon the user's history of use.
31. The method of Claim 25, further comprising the step of:  
10 monitoring one or more parameters of the user's body condition to determine whether a measured parameter of the user's body condition is at a level sufficient enough to warrant a modification of a predetermined program regulating cyclic variations in altitude conditioning.
32. The method of Claim 31, further comprising the step of:  
15 modifying said predetermined program regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the selected predetermined program.
33. The method of Claim 31, further comprising the step of:  
20 selecting an alternate predetermined program for regulating the cyclic variations in altitude conditioning if the readings of a measured parameter of a user's body condition is deemed to be at a level sufficiently outside a predetermined range for the originally selected predetermined program.
- 25 34. A method for providing cyclic variations in altitude conditioning, said method comprising the steps of:  
evaluating and classifying a user into one of a predetermined number of body type categories;  
enabling the user to successfully complete a set-up session in a pressure vessel;



selecting a cyclic variations in altitude conditioning program based upon the user's categorization;

enabling the user to undergoing rapid transitions between simulated altitudes in the pressure vessel according to cycles determined by said program;

5 using a user sensor to measure at least one parameter of a user's body condition;

determining whether the measured parameter is within a predetermined desired range, and if within such range, allowing said program to continue, and if outside of such range, modifying said program to provide the user with a modified program in real time that will better match the needs of the user based upon the user's categorization and current body condition.

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35. A method for providing cyclic variations in altitude conditioning, said method comprising the steps of:

evaluating and classifying a user into one of a predetermined number of body type categories;

15 enabling the user to successfully complete a set-up session in a pressure vessel;

selecting a cyclic variations in altitude conditioning program based upon the user's categorization;

enabling the user to undergoing rapid transitions between simulated altitudes in the pressure vessel according to cycles determined by said program;

20 using a user sensor to measure at least one parameter of a user's body condition;

determining whether the measured parameter is within a predetermined desired range, and if within such range, allowing said program to continue, and if outside of such range, switching said program to provide the user with an alternative program in real time so that the alternative program will better match the needs of the user based upon the user's categorization and current body condition.

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36. The method of Claim 34, further comprising the steps of:

requiring the user to provide payment information via an on-board interface prior to enabling the user to execute said cyclic variations in altitude conditioning program.

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37. The method of Claim 34, further comprising the steps of:  
    requiring the user to provide payment information via a kiosk controller prior to enabling  
the user to execute said cyclic variations in altitude conditioning program.

5    38. The method of Claim 35, further comprising the steps of:  
    requiring the user to provide payment information via an on-board interface prior to  
enabling the user to execute said cyclic variations in altitude conditioning program.

39. The method of Claim 35, further comprising the steps of:  
10    requiring the user to provide payment information via a kiosk controller prior to enabling  
the user to execute said cyclic variations in altitude conditioning program.